

Please replace the paragraph on page 27, commencing at line 27, with the following paragraph:

C8 pCY214 (cm<sup>R</sup>) contains the *E. coli* *birA* (biotin ligase) gene under the ara promoter and is described in Chapman-Smith, *et al.*, *Biochem. J.* (1994) 302:881-887. The PCC protein and *pcc* gene are described in Rodriguez, *et al.*, *Microbiol.* (1999) 145:3109-3119.

In the Claims

Please delete claims 2-9, 24-29, and 42-52 without prejudice.

Please replace claim 1 with the following claim:

C9 1. (Amended) A recombinant *E. coli* host cell which is genetically modified for synthesis of a polyketide, wherein said modification comprises incorporation of a propionyl CoA carboxylase (*pcc*) expression system wherein said *pcc* expression system produces an enzyme capable of synthesizing 2S-methylmalonyl CoA, incorporation of at least one expression system for a modular polyketide synthase (PKS), and incorporation of at least one expression system for a phosphopantetheinyl transferase.

Please add the following new claims

C10 53. (New) The host cell as in claim 1 wherein the *pcc* expression system comprises the *pccB* and *accA2* genes from *S. coelicolor*.

54. (New) The host cell as in claim 53 wherein the host cell further comprises an expression system for biotin ligase.

55. (New) The host cell as in claim 1  
wherein the expression system for biotin ligase is the *birA* gene from *E. coli*.

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56. (New) The host cell as in claim 1  
wherein the phosphopantetheinyl transferase expression system comprises the *sfp* gene from *Bacillus subtilis*.

57. (New) The host cell as in claim 1  
wherein the cell has no functional endogenous pathway for propionate catabolism.

58. (New) The host cell as in claim 57  
wherein the cell's *prpAD* operon is disabled.

59. (New) The host cell as in claim 1  
wherein the PKS is DEBS.

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60. (New) The host cell of claim 1 wherein the polyketide is 6-dEB.

61. (New) A recombinant *Streptomyces* host cell which is genetically modified for enhanced synthesis of a polyketide,  
wherein said modification comprises incorporation of a *matB* gene.

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62. (New) The host cell as in claim 61  
wherein modification includes incorporation of a *matC* gene.

63. (New) The host cell as in claim 62  
wherein the modification further comprises incorporation of a *matA* gene.

64. (New) The host cell as in claim 61  
wherein said modification further comprises incorporation of at least one expression system for a modular polyketide synthase (PKS).

65. (New) The host cell as in claim 61  
wherein the host cell is *Streptomyces coelicolor*.

*M D 37*  
66. (New) The host cell as in claim 61  
wherein the *mat* genes is from *Rhizobium trifoli*.

67. (New) The host cell as in claim 61  
wherein the PKS is DEBS.

68. (New) The cell as in claim 61 wherein the polyketide is 6-dEB.

69. (New) A recombinant *E. coli* host cell which is genetically modified for synthesis  
of a polyketide,

wherein said modification comprises  
incorporation of a *matB* gene, and  
incorporation of at least one expression system for a modular polyketide synthase  
(PKS), and  
incorporation of at least one expression system for a phosphopantetheinyl transferase.

*C10 M D 47*  
70. (New) The host cell of claim 69  
wherein the modification further comprises incorporation of a *matC* gene.

71. (New) The host cell as in claim 70  
wherein the modification further comprises incorporation of a *matA* gene.

72. (New) The host cell as in claim 69  
wherein the *mat* gene is from *Rhizobium trifoli*.

73. (New) The host cell as in claim 69  
wherein the PKS is DEBS.

74. (New) The host cell as in claim 69 wherein the polyketide is 6-dEB.

75. (New) A method to produce a polyketide which method comprises culturing the  
cells of claim 1 under conditions wherein said polyketide is produced.

76. (New) A method to assess the results of a procedure effecting modification of polyketide synthase genes according to claim 1, resulting in a mixture of said modified genes which method comprises

transfected a culture of *E. coli* of claim 1 with said mixture of modified genes,  
culturing individual colonies of said transformed *E. coli*, and  
assessing each colony for polyketide production

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77. (New) The method of claim 75 which further includes providing a substrate, wherein the substrate is of the formula  $R_2C(COOH)_2$  wherein one R is H, methyl or ethyl and the other is H.

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